REMARKS

This amendment is responsive to the Final Office Action of January 19, 2010. Reconsideration and allowance of claims 1-20 are requested.

The Office Action

Claims 1-6 and 12 stand rejected under 35 U.S.C. § 103 over Barnitz (US 5,795,328) as modified by Gehm (US 6,045,331).

Claims 1, 2, and 10 stand rejected under 35 U.S.C. § 103 over Johnson (US 4,728,869) as modified by Gehm.

Claims 7, 8, 10, 11, 13, 14, and 16 stand rejected under 35 U.S.C. § 103 over Barnitz as modified by Gehm, as further modified by Rousseau (US 6,419,455).

Claims 9 and 15 stand rejected under 35 U.S.C. § 103 over Barnitz, as modified by Gehm, as further modified by de-Simon (US 5,971,725).

MPEP § 2144.03

The applicant hereby challenges the Examiner's assertion in paragraph 9 of the Final Rejection that PID controllers which operate as described in the present claims are well-known in the art. Purusant to MPEP § 2144.03, the applicant calls upon the Examiner to cite appropriate prior art in support of the assertions of paragraph 9.

The working principle of PID controllers differs from the present claims. As the Examiner noted, a PID controller changes the speed to a value proportional to ***the difference*** between the observed inlet pressure and the desired inlet pressure, i.e., the error. The aim of a PID controller is to minimize the error between the observed and desired inlet pressures by adapting the motor speed.

The present claims do not call for determining a desired inlet pressure. Nor do the present claims call for adjusting rotational speed in accordance with a difference between observed and desired inlet pressures. Further yet, the present claims do not call for minimizing the error between the observed and desired inlet pressures.

The Claims Distinguish Patentably Over the References of Record

As discussed above, a PID controller determines an error between the observed inlet pressure and a desired or set point inlet pressure. The speed is adjusted based on this error, particularly to minimize it. Looking to method **claims 1 and 3**, a desired or set point inlet pressure is not determined or used in the claimed control method. Rather, claims 1 and 3 call for measuring the current inlet pressure in order to determine the stored corresponding speed value. That is, in claims 1 and 3, in the alteration range, the motor speed depends ***only*** on the current inlet pressure.

To the contrary, as applied by the Examiner, the applied references control the speed based on a difference between the current and set point or desired inlet pressure. More specifically, **Gehm** runs the pump at its fastest setting until the vacuum remains stable (within 0.3 inches of mercury) for 15 seconds (Gehm, column 3, lines 31-38). Subsequently, i.e., after the input pressure has remained stable for 15 seconds, the motor speed is incrementally decremented from the maximum speed to *a second set point*. According to column 4, lines 25-28 of Gehm, the second set point is halfway between the maximum speed and a speed which is 5% faster than the speed at which the vacuum level drops 0.2 inches of mercury (the first set point). If the pressure remains constant for another 15 seconds, the motor speed is reduced to the smallest possible discrete setting (column 5, line 40), i.e., the first set point.

In other words, Gehm employs three discrete speed settings rather than a continuous curve in which the motor speed is directly assigned to each measured pressure input. According to Gehm, the discrete speed settings are not directly related to the measured input pressure. To the contrary, the speed chosen after the input pressure has remained within a certain range for a certain period of time. When the motor speed is changed from one set point to another, the speed is incrementally decreased (column 5, lines 36-37), which means that the discrete incremental decrementing of the motor speed values are chosen depending on time interval. The chosen speed is not directly correlated to the measured input pressure. Indeed, the decrementing of speed continues when the input pressure remains stable.

Gehm does not employ a continuous pre-defined curve in which motor speed value is assigned to continuously measured input pressure values. Moreover,

Gehm does not determine speed based on a curve. Instead of employing a continuous pressure-speed curve, Gehm incrementally decreases the motor speed at discrete time intervals if the input pressure has remained stable, i.e., not changed, for the time interval. The results of the Gehm method are imprecise because the time intervals between adjustment of the motor speed results in time delays.

Independent claims 1 and 3, on the other hand, provide more precise setting of the motor speed because each pressure value of the continuously measured input pressure is assigned a corresponding speed value which is automatically and immediately retrieved and implemented. As the measured input pressure changes, the motor speed is immediately changed without waiting for a time interval before changing the motor speed. Moreover, the motor speed is not incrementally decremented in discrete time intervals between two pre-calibrated set points. Rather, independent claims 1 and 3 call for the measured input pressure to set the speed directly and without waiting a time interval.

Accordingly, it is submitted that method **claims 1 and 3** and **claims 2, 4-9, and 12-15 dependent therefrom** distinguish patentably and unobviously over the references of record.

Claim 10 calls for a continuous curve which indicates a respective speed value of the drive motor for each inlet pressure. By contrast, the combinations of references applied by the Examiner periodically decrement motor speed in steps based on stability of the input pressure rather than the input pressure value.

Accordingly, it is submitted that **claim 10** and **claims 11 and 16 dependent therefrom** distinguish patentably and unobviously over the references of record.

New **claim 17** is based on claim 10, but revised to emphasize that there is a single preselected drive speed for each input pressure and such motor speeds are retrieved from a memory which stores this relationship. By contrast, the combinations of references applied by the Examiner select motor speeds based on pressure stability and lack a memory or the like which stores a preselected relationship between input pressure and the corresponding motor speed.

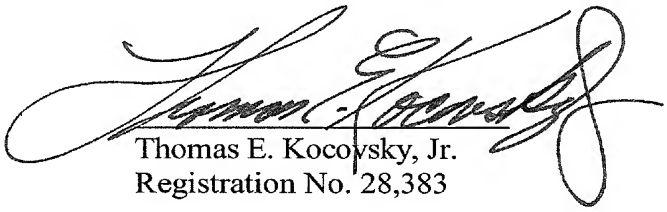
Accordingly, it is submitted that **claim 17** and **claims 18-20 dependent therefrom** distinguish patentably and unobviously over the references of record.

CONCLUSION

For the reasons set forth above, it is submitted that claims 1-20 distinguish patentably over the references of record and comply with the other statutory requirements. An early allowance of all claims is requested.

In the event the Examiner considers personal contact advantageous to the disposition of this case, the Examiner is requested to telephone Thomas Kocovsky at 216.363.9000.

Respectfully submitted,



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